

## **ABSTRACT**

A method of reconstructing an image from an MRI machine includes receiving a superposition of phase-weighted spin echoes. This is representative of a two-dimensional spin density that encodes the image. A partial spin density is then recovered from the superposition of spin echoes. This partial spin density is a PERL transform of the two-dimensional spin density. The two-dimensional spin density is then recovered from the partial spin density by analytically evaluating an inverse PERL transform of the partial spin density.